

**B.Com (IT) / B.Com (Comp) / BBA (IT)**  
**II Year - III Semester**  
**Database Management Systems**  
**(Discipline Specific Core)**  
**w.e.f 2018-19**

**Scheme of Instruction**

Total Duration Hrs : 60  
Hours/Week : 06(4T+2P)  
Credits : 5  
Instruction Mode: Lecture +practical  
Course Code : BS.06.201.14T

**Scheme of Examination**

Max. Marks : 100  
Internal Examination :40  
External Examination :60  
Exam Duration : 3 Hrs

**Course Objectives:**

To impart the students with the knowledge on the database management systems, design models, Normalization and SQL in Creation and maintenance of databases.

**Course Outcomes:**

The students will be able to

- **CO 1:** Understand and evaluate the database environment in an organization.
- **CO 2:** Analyze and demonstrate the different data models utilized and relationships for developing a database.
- **CO 3:** Acquire skills in designing real time databases using the concepts of Normalization.
- **CO 4:** Design and Develop database using Structured Query Language.
- **CO 5:** Demonstrate the usage of sub queries and functions in processing multiple tables in Database Environment.

**UNIT-I: The Database Environment**

**(12 Hours)**

Basic Concepts and Definitions: Data, Information, Metadata, Database, DBMS. Traditional File Processing Systems, The Database approach, Advantages of Database Management System, Components of Database Environment. Types of databases, Risk and costs of Database.

**UNIT-II: Entity-Relationship Model**

**(12 Hours)**

Data Model Definition, Entity-Relationship Model Constructs: Entities, Attributes & Relationships. Types of Entities, Types of Attributes, Types of Relationships, Degree of a Relationship: Unary, Binary and ternary. Cardinality Constraints, Examples.

**UNIT-III: Normalization****(12 Hours)**

**Normalization:** Definition of Normalization, Need for Normalization, Codd's Rules, First Normal Form (1NF), Second Normal Form (2NF), Third Normal Form (3NF). Boyce Codd Normal Form (BCNF), De-normalization.

**UNIT-IV: Introduction to SQL****(12 Hours)**

**Introduction to SQL:** Introduction, SQL Environment, Data Definition Commands: Create, Alter, Drop, Truncate. Data Integrity Controls: Primary Key Constraint, Unique Key Constraint, Not Null Constraint, Foreign Key Constraint, Check Constraint. Data manipulation Commands: Insert, Update, Delete. Data Control Commands: Commit, Rollback. SQL Operators: Arithmetic, Logical, Relational and Special Operators.

**UNIT-V: Processing Single & Multiple Tables****(12 Hours)**

Select Statement, Distinct, Order by Clause, Group by Clause, Having Clause. Aggregate Functions, Views, Set Operators: Union, Intersect and Minus. Joins: Equi-join, Natural Join, Outer Join. Sub Queries.

**Lab Work:** Creating, altering and deleting tables, Data manipulation and executing queries using SQL.

**References:**

1. Modern Database Management: Fred R. McFadden
2. Database System Concepts: Peter Rob, Carlos Coronel
3. SQL, PL/SQL: The Programming Language of Oracle: Ivan Bayross